

## REVISIONAL NOTES ON AUSTRALIAN CARABIDÆ.

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## PART II.

Tribe vi.—**Scaritini.**

The tribe *Scaritini*, as here limited, contains numerous and highly specialised genera, and is found in all the large land areas of the globe. I have not seen any record of its occurrence in New Zealand, though it has been found in Lord Howe Island (*Scaraphites*) and in New Caledonia (*Scaritoderus*). It is the most important carabidous tribe in Australia, and as there represented may be divided into two subtribes, as under :—

- Buccal fissure not closed by sides of mentum, but extending backwards and dividing submentum from paragenæ.\* Elytra with lateral channel granulate.....SCARITIDES.  
 Buccal fissure closed posteriorly by the sides of the mentum. (Submentum and paragenæ contiguous.) Elytra with lateral channel lævigata (never granulate† among Australian forms).....‡PASMACHIDES.

## Subtribe SCARITIDES.

Two Australian genera are known, each representing a different and widely separated group in the subtribe Scaritides. They are readily differentiated thus :—

- Maxillæ hooked at apex. Elytra strongly punctate-striate, interstices convex. Eyes very small, not visible from above.....*Steganomma*.  
 Maxillæ obtuse at apex. Elytra smooth (striae obsolescent). Eyes distinct. ....*Geoscaptus*.

\* *Paragenæ*. In his Monograph of the *Scaritides*, Chaudoir proposed the term *paragenæ* for a part of the underside of the head situated between the channel in which the first joint of the antennæ is lodged when the insect lays them back, and the sides of the mentum.

† In his 'Monograph,' Chaudoir records African species of this group with the elytra non-granulate on the sides.

‡ It appears that for the sake of uniformity in nomenclature, the Australian group heretofore known as *CARENIDES* must be included in the *PASMACHIDES*, the latter being the older name.

## Genus STEGANOMMA.

Macleay, Proc. Linn. Soc. N. S. Wales, (2) ii. 1887, p.133.

The granulate lateral channel of the elytra, and the mentum concealing the base of the maxillæ, while the buccal fissure runs narrowly back and divides the submentum from the paragenæ, indicate the place of *Steganomma* to be in the subtribe *Scaritides*: it seems to lead towards the *Clivinini*.

I supplement Macleay's description by the following note on the single recorded species of the genus:—

## STEGANOMMA PORCATUM, Macleay.

Proc. Linn. Soc. N. S. Wales, (2) iii. 1887, p.133.

Base of maxillæ concealed by mentum. Buccal fissure extending backwards and dividing submentum from the small paragenæ. Labial palpi with penultimate joint bisetose. Eyes very small (not perceptible from above), placed on anterior declivity of the projecting orbits in the angle formed by the anterior margin of the orbits and the supra-antennal plates.\* Antennæ moniliform, four basal joints glabrous. Prothorax a little wider than head (3.6 × 4.1 mm.), widest just behind anterior angles; anterior margin truncate; base wide, not lobate; each lateral channel with four setigerous punctures on curve of posterior angles, and three similar punctures on anterior third. Elytra widest a little behind middle (7 × 4 mm.), strongly and evenly convex, lightly rounded on sides; six wide crenulate sulci on each elytron; interstices roundly convex, sixth bearing the fine seventh stria, eighth interstice (between linear seventh stria and granulate margin) very narrow; marginal channel wide, closely granulate; lateral border narrow; base abruptly and deeply declivous to peduncle, bordered on each side,—the border forming a short erect humeral tooth at

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\* The very small hidden eyes call to mind Horn's note that the minute European species, *Reichia lucifuga*, Sauley, a Clivinid, was "the only known member of the Carabinae with the eyes so reduced as to be with difficulty observed" (Trans. Amer. Ent. Soc. xi. 1881, p.188).

base of sixth interstice. Prosternum carried forward on same plane as intercoxal part, and becoming triangular and vertical at apex. Length 15, breadth 4 mm.

*Hab.*—Q.: Russell River (Froggatt), Kuranda (Dodd). Two specimens (♂) were sent to me by Mr. F. P. Dodd from Kuranda, near Cairns.

Genus *GEOSCAPTUS*.

Chaudoir, Bull. Mosc. 1855, i. p.9; Ann. Soc. Ent. Belg. xxii. 1879, p.135: *Scarites*, Macleay, Trans. Ent. Soc. N. S. Wales, i.; *Scarites*, Castelnau, Trans. Roy. Soc. Victoria, viii. 1868.

Baron de Chaudoir, in his 'Monograph of 1879,'\* says that the Scaritides, *sensu strictiore*, are distinguished completely from the other sections [of the Scaritini] by the form of the labium, which has nothing analogous in the whole family [Carabidæ]. Under *Scarites*,† he describes the labium [ligula] as "*valde concava, postice hispida, utrinque in dentem setigerum producta, paraglossæ barbata, angustæ, ligulam longe superantes.*" This form of labium is very strongly developed in the Australian genus *Geoscaptus*; the labium of the Pasimachides, though very different from that of the Scaritides, seems a modification of the same archetype. The following sketch gives an idea of the form of the labium in *Philoscaphus* and *Geoscaptus*, in neither of which genera has the labium been figured before.



Labium to show anterior margin.

Fig.1. *Philoscaphus tuberculatus*, Macl. Fig.2. *Geoscaptus cacus*, Macl.

From the table of genera given by Chaudoir in his Monograph (pp.127-129), it is learned that *Geoscaptus* is differentiated from

\* Ann. Soc. Ent. Belg. xxii. p.129.

† *Ib.* xxiii. p.63

all the other genera of the Scaritides there treated of by the following features in combination :—

“*Maxille mala inferiore superiorem multum superante. Maxilla mala superiore apice obtuse rotundata. Episterna postica angustata longaque (Elytra libera; species alate). Elytra intra marginem haud carinata. Tarsi articulo ultimo tenui elongato.*”

In Chaudoir's index list of species at the end of his paper, all Macleay and Castelnau's species are reduced to two, viz., *G. cacus*, Macl., and *G. levissimus*, Chaud. In this I concur, with a reservation in favour of *Scarites plicatulus*, Casteln. (*Vide* p.107).

Chaudoir distinguished the two well known species *G. levissimus* and *G. cacus* from one another thus:—

- “1. *Tibiæ intermedie unispinose, posticæ extus simplices . . . G. levissimus.*”  
 “2. *Tibiæ intermedie bispinose, posticæ apice externo in dentem acutum producto . . . . . G. cacus.*”

This accurately differentiates the typical forms of these two species, but Queensland specimens have been given to me by Mr. C. French as from “Winton District” and “Gulf of Carpentaria,” which have the facies of *G. levissimus*, but the second external spine of the intermediate tibiæ almost as well defined as in *G. cacus*, the posterior tibiæ without an external apical tooth. This form I consider identical with *G. planiusculus*, Macl. (from comparison with Macleay's type in the Australian Museum), but I cannot see more in it than a form of *G. levissimus*.

#### GEOSCAPTUS LEVISSIMUS, Chaudoir.

Bull. Mosc. 1855, i. p.10; Ann. Soc. Ent. Belg. xxii. 1879, p.136; *Scarites geryon*, Macl., Trans. Ent. Soc., N. S. Wales, i. (1863), p.68; *Sc. damastes*, Macl., *l.c.*; *Sc. planiusculus*, Macl., *l.c.* (1865), p.193; *Sc. bostocki*, Casteln., Trans. Roy. Soc. Vict. viii. (1868) p.144.

I have examined the type of *Sc. damastes*, Macl., which was placed under *G. cacus* by Chaudoir, and regard it as identical with *G. levissimus*.

*Hab.*—N.S.W. : Mulwala, Urana, Junee, Grenfell (Sloane).

## GEOSCAPTUS CRASSUS, Sloane.

This form differs from *G. levissimus*, Chaud., by size larger, form more convex (particularly of under surface); mandibles with upper surface closely and finely striolate, basal edge of upper surface not extending forward as a ridge; anterior tibiæ with two well developed small external teeth above the three large ones, and with upper internal spur wide and rounded at apex (not wide and angulate as in *G. levissimus*); intermediate tibiæ bispinose externally; posterior tibiæ with outer apex raised into a short dentiform spur. Further investigation of the differences between it and *Sc. planiusculus*, Macl., is required, but I do not, from the data available to me, consider these forms identical.

*Hab.*—Q.: Cooktown District (King's Plains Station; Mr. N. H. Gibson), Townsville (Dodd).

## GEOSCAPTUS PLICATULUS, Casteln.

*Scarites plicatulus*, Casteln., Trans. Roy. Soc. Vict. viii. (1868), p.143; Chaudoir, Ann. Soc. Ent. Belg. 1879, xxii. p.138. •

Chaudoir examined the type of *Sc. plicatulus*; his whole note on it is so short that I translate it fully, as follows:—*In Sc. plicatulus*, Casteln., *the prothorax is a little broader* [than in *G. cacus*], *the clypeus a little more strongly striate, the elytra a little more oval, but I doubt from the single specimen in the Castelnau collection whether it constitutes a distinct species.* A specimen found by Mr. R. Helms on the Upper Ord River (near Cambridge Gulf) has the tibial characters of *G. cacus*, but the facies of *G. levissimus* (though the metasternal episterna are shorter, being shorter than in *G. cacus*). If we suppose that Chaudoir attached more importance to the tibial characters he used to separate *G. levissimus* and *G. cacus* than to facies, we may consider this form to be *G. plicatulus*, Casteln. Length 12 lines (*vide* Castelnau).

*Hab.*—Northern Territory: Escape Cliff (*vide* Castelnau).

## GEOSCAPTUS CACUS, Macleay.

*Scarites cacus*, Macl., Trans. Ent. Soc. N. S. Wales, 1663, i. p.67; *Sc. approximatus*, Macl., l.c. 1865, i. p.191; *Sc. waterhousei*, Macl., l.c. p.192; *Sc. subporcatulus*, Macl., l.c. p.192; *Sc. substriatus*, Casteln., Trans. Roy. Soc. Vict. 1868, viii. p.143; *Sc. mitchellii*, Casteln., l.c. p.143; *Sc. ruficornis*, Casteln., l.c. p.144; *Sc. bipunctatus*, Casteln., l.c. p.144; (?) *G. macleayi*, Chaud., Ent. Soc. Belg, 1879, xxii., p.138.

To the synonymy given by Chaudoir\* I add *Scarites approximatus*, Macl., and *Sc. subporcatulus*, Macl., the types of which (in the Australian Museum) I have examined and identified as *G. cacus*.

## GEOSCAPTUS MACLEAYI, Chaudoir.

Ann. Soc. Ent. Belg. 1879, xxii. p.138.

I have not been able to identify this species, so append a translation of Chaudoir's whole note on it.

Almost as convex as *G. cacus*, Macl., but shorter. Head shorter, clypeus wholly striate, a couple of striæ near the frontal channels. Prothorax evidently less elongate and a little less convex; elytra decidedly shorter, a little flatter along the suture, impressed with distinctly punctate but shallow striæ, the punctures of the striæ wide, the interstices slightly convex. Coloured like *G. cacus*, but a little less shining on upper surface. The specimen I possess, and which was sold to me by M. Deyrolle, comes from the North-West of Australia. Although allied to *G. cacus*, the relative difference in length seems to me sufficiently decided to necessitate the formation of a distinct species. Length 20, breadth  $5\frac{1}{3}$  mm.

Subtribe PASIMACHIDES.

Genus SCARAPHITES.

Westwood, Arcan. Ent. i. 1842, p.157; Sloane, Proc. Linn. Soc. N. S. Wales, (2) viii. (1893) p.449.

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\* Ent. Soc. Belg. xxii. 1879, p.138.

*Table of Species known to me.*

My knowledge of the genus has become considerably increased since I formerly published a tabular list of the species known to me eleven years ago; it is, therefore, hoped the present table will give a better idea of the relationship of the species.

- A. Elytra without widely placed punctures on lateral } *Sc. laticollis*, Macl.  
and apical declivities ..... } *Sc. gigas*, Casteln.
- AA. Elytra with widely placed punctures on lateral and apical declivities.
- B. Prothorax shortly but strongly sinuate on each side posteriorly, basal angles sharply marked, subrectangular (posterior marginal seta at basal angle); elytra with border wide at humeral angles, not folded over inwards, but with edge interrupted just behind shoulders to form a humeral prominence.....*Sc. lucidus*, Chaud.
- BB. Prothorax not strongly sinuate on each side posteriorly, basal angles not sharply marked; elytra with border continuous, or folded over inwards at humeral angles.
- C. Elytra with border continuous, not folded over or thickened at humeral angles.
- D. Intermediate tibiæ with external apical } *Sc. silenus*, Westw.  
tooth acute ..... } *Sc. mastersi*, Macl.
- DD. Intermediate tibiæ with external apical tooth dilatate and obtuse.
- e. Elytra with lateral border wide at humeral angles and continued on to base; posterior tibiæ hardly thickened at apex.....*Sc. lenæus*, Westw.
- ee. Elytra with lateral border narrow and ending at humeral angles; posterior tibiæ with apex strongly produced and prominent externally.....*Sc. pacificus*, Sl.
- CC. Elytra with border thickened and folded over inwards at humeral angles.
- F. Intermediate tibiæ with external apical tooth dilatate and obtuse.....*Sc. hirtipes*, Macl.
- FF. Intermediate tibiæ with external apical tooth acute.....  
.....*Sc. rotundipennis*, Dej.

NOTE.—*Sc. bacchus*, Westw., I do not know; it probably would fall into section “D” of the table given above. *Sc. heros*, Casteln., also unknown to me, seems allied to *Sc. bacchus*. *Sc. humeralis*, Casteln., evidently should be placed with *Sc. laticollis*, Macl., differing apparently by “the protuberance below the

eyes not very considerable," and its "brilliant" black colour; it is unknown to me.

SCARAPHITES LUCIDUS, Chaudoir.

Rev. Mag. Zool. 1863 (2), xv. p.115.

It seems necessary to offer a short description of the species I identify as *Sc. lucidus*, Chaud., seeing that this species has not been commented upon, that I know of, since Chaudoir first described it; and that there is always a possibility of one's identifications from descriptions proving erroneous.

Black, shining, lævigata. Head transverse (8 mm. across eyes); orbits not projecting sharply below eyes. Prothorax subcordate ( $6 \times 9.7$  mm.); sides subparallel in middle, lightly rounded anteriorly, widely rounded at posterior angles and strongly angustate to base, shortly and sharply sinuate before basal angles; anterior margin widely emarginate, anterior angles advanced, obtuse; base truncate, sloping forward obliquely a little on each side to basal angles; these sharply marked, subrectangular; a marginal seta at each basal angle. Elytra ovate ( $13 \times 10$  mm.), smooth (striæ obsolete); border wide, reflexed, widest at humeral angles, not folded over at shoulders but sharply raised just behind humeral angles; each elytron with three widely placed setigerous punctures on posterior half at a little distance from margin, and two similar punctures on apical declivity. Anterior tibiæ 3-dentate, middle tooth triangular, acute, not nearer apex than base of inner apical spine, upper tooth obtuse, not decidedly raised posteriorly from the outer edge of the tibiæ; intermediate tibiæ with a sharp erect subapical external tooth, posterior tibiæ but little dilatate at apex. Length 28, breadth 10 mm.

*Hab.*—W.A.: Bunbury (Lea).

The prothorax with strong lateral sinuosities and sharply marked posterior angles, and elytra with border widely reflexed at humeral angles—the edge being sharply and suddenly lowered behind the shoulders,—distinguish this species at once from all its congeners.



## SCARAPHITES MASTERSI, Macl.

Trans. Ent. Soc. N. S. Wales, 1869, ii. p.70.

I have examined the type-specimen in the Australian Museum, Sydney; it is very closely allied to *Sc. silenus*, Westw., with which it agrees in form of prothorax (with widely truncate base and basal angles not marked); the posterior marginal setigerous puncture is exactly similarly placed in the lateral channel, just before the basal angle; the legs are similar; the humeral angles of the elytra the same. Compared with a specimen of *Sc. silenus* in my collection, the only differences seem to be the elytra wider at the base and less strongly rounded on the sides. I suspect these differences may be sexual, but am not prepared to say absolutely that *Sc. mastersi* is synonymous with *Sc. silenus*, Westw.

## SCARAPHITES MARTINI, Castelnau.

Trans. Roy. Soc. Vict. 1868, viii. p.133.

The description of *Sc. martini* reads as if founded on a species very closely allied to *Sc. silenus*, Westw.; indeed, it seems as if it might be taken from a specimen of *Sc. silenus*. Seeing that Castelnau gives the exact habitat (Champion Bay) of his species, its identity could no doubt be established were a specimen from that locality before one.

## SCARAPHITES LENEUS, Westwood.

*Scarites lenæus*, Arcan. Ent. i. 1842, p.87; *Scaraphites latipennis*, Macl., Trans. Ent. Soc. N. S. Wales, 1863, i. p.66.

A specimen of *Sc. latipennis*, Macl., has been given to me by Mr. A. M. Lea, which I have compared with the type of *Sc. latipennis* in the Macleay Museum. After comparison with Westwood's description and figure of *Sc. lenæus*, I feel no hesitation in attributing my specimen to that species. It differs from *Sc. hirtipes*, Macl., by (a) prothorax with basal angles marked, the posterior marginal seta placed in the marginal channel at the basal angle, (b) border of elytra not thickened at humeral angles; from *Sc. pacificus*, Sl., by form more parallel, border of

elytra much thicker and more reflexed at shoulders, posterior tibiæ not strongly dilatate externally at apex.

SCARAPHITES HIRTIPES, Macleay.

Trans. Ent. Soc. N. S. Wales, 1864, i. p.147; *Sc. crenaticollis*, Macl., *l.c.* p.148; *Sc. assimilis*, Sl., Proc. Linn. Soc. N. S. Wales, 1893 (2), viii. p.452.

The characters by which I sought to differentiate *Sc. assimilis* from *Sc. hirtipes*, Macl., do not now appear to me to justify its being regarded as different.

*Hab.*—S.A.: Fowler Bay (*fide* French)—Vic.: Cape Otway (Sloane); Mallee District (C. French, Junr.).

SCARAPHITES ROTUNDIPENNIS, Dejean.

*Scarites rotundipennis*, Dej., Spec. i. 1825, p.401: *Scaraphites macleayi*, Westw., Arcan. Ent. i. 1842, p.157; *Sc. intermedius*, Macl., Trans. Ent. Soc. N. S. Wales, 1865, i. p.190; *Sc. insulanus*, Sl., Proc. Linn. Soc. N. S. Wales (2), iii. 1888, p.1106.

Castelnau suggested\* that *Sc. macleayi*, Westw., and *Sc. intermedius*, Macl., were synonyms of *Sc. rotundipennis*, Dej., in which view he was evidently right. I have examined the type specimens of *Sc. intermedius* in the Macleay Museum, and compared them with specimens of *Sc. rotundipennis* without being able to find any specific difference. *Sc. insulanus*, Sl., cannot be maintained as distinct from *Sc. rotundipennis*.

*Hab.*—Vic.: Melbourne — N.S.W.: Sydney and Illawarra (Macleay)—Bass Straits: King Is. (*fide* Sloane)—Tasmania (*fide* Bates)†—Lord Howe Is. (*fide* Olliff)‡.

Genus EURYSCAPHUS.

EURYSCAPHUS HOPEI, Castelnau.

*Scaraphites hopei*, Casteln., Trans. Roy. Soc. Vict. viii. 1868, p.131; (?) *Euryscaphus politus*, Sl., Proc. Linn. Soc. N. S. Wales (2), viii. 1893, p.457.

\* Trans. Roy. Soc. Vict. 1868, viii. p.133.

† Cist. Ent. 1878, ii. p.325.

‡ Mem. Aust. Mus. 1889.

I now believe that I erred on the side of excessive caution in not considering the specimen on which I formed the species *E. politus* to be *E. hopei*, Casteln. There seems every probability of their being synonymous; Castelnau's slight description of *E. hopei* is applicable to *E. politus*, and both being from Central Australia gives additional support to the likelihood of their identity.

EURYSCAPHUS DILATATUS, Macl.

Trans. Ent. Soc. N. S. Wales, i. 1865, p.188; *E. minor*, Macl., *l.c.* p.189; *Scuraphites carbonarius*, Casteln., Trans. Roy. Soc. Vict. viii. 1868, p.130; *Sc. affinis*, Casteln., *l.c.* p.130; *E. arenarius*, Sl., Proc. Linn. Soc. N. S. Wales (2), iii. p.1108.

I formerly published the synonymy of *E. affinis*, Casteln., and *E. arenarius*, Sl., with *E. minor*, Macl., and subsequent examination of the types of *E. dilatatus* and *E. minor* in the Australian Museum in comparison with specimens in my possession leads me to consider these as synonymous.

The type of *E. carbonarius*, Casteln., was formerly in the Howitt Collection, but is no longer in existence. I saw it in 1892, but merely made a note that it was without discoidal punctures on the elytra. The descriptions of *E. dilatatus*, Macl., and *E. carbonarius*, Casteln., have always seemed to me likely to have been founded on the same species, and though absolute certainty cannot now be attained, I believe it will not be wrong to consider them synonymous.

Genus PHILOSCAPHUS, Macleay.

Trans. Ent. Soc. N. S. Wales, ii. 1871, p.96.

Having a new species of *Philoscaphus* to describe, the following table of the genus is given to show its position, and as a help towards the identification of the species.

Marginal declivity of elytra double—divided longitudinally by an intermediate costa. .... *Ph. costalis*, Macl.  
 Marginal declivity of elytra single.

Size large, elytra tuberculate.....*Ph. tuberculatus*,\* Macl.; *Ph. mastersi*,  
Macl.; *Ph. duboulayi*, Blackb.; *Ph. bicostatus*, n.sp.

Size small, elytra not tuberculate on disc.

Black.....*Ph. carinatus*, Macl.

Elytra black, with bright red-golden margin.....*Ph. barnardi*, Macl.

#### PHILOSCAPHUS COSTALIS, Macleay.

Trans. Ent. Soc. N. S. Wales, ii. 1873, p.324.

After examination of the types of *Ph. costalis*, Macl., and *Ph. lateralis*, Macl., in comparison with a specimen in my collection from Kalgoorlie, I cannot consider *Ph. lateralis* more than a small form of *Ph. costalis*. I place *Ph. crassus*, Blackb., under *Ph. costalis* for two reasons, firstly, because a careful study of the description discloses nothing to differentiate it from my specimen of *Ph. costalis* from Kalgoorlie; secondly, because the identification of *Ph. lateralis* as synonymous with *Ph. costalis* will extend the range of *Ph. costalis* sufficiently to take in the locality of *Ph. crassus*.

*Hab.*—W.A.: Nickol Bay (*vide* Macleay), Yilgarn (*vide* French), Kalgoorlie (G. W. Froggatt)—S.A.: Wallaroo (type *Ph. lateralis*, in Australian Museum), Ouldea (*vide* Blackburn).

#### PHILOSCAPHUS BICOSTATUS, n.sp.

Black, prothorax very wide, transversely rugulose-striate, lobate; elytra narrower than prothorax, bicostate; anterior tibiae tridentate, intermediate tibiae strongly unidentate externally at apex.

Head transverse-quadrate (6.3 mm. across eyes), similar to that of *Ph. mastersi*, Macl. Prothorax transverse (5 × 8.3 mm.); disc transversely rugulose; anterior margin truncate behind head; anterior angles obtuse, shortly and decidedly advanced; sides subparallel; posterior angles widely rounded; basal curve strongly sinuate on each side; basal lobe rounded; marginal channel wide, shallow on sides; border lightly reflexed on sides, strongly so at posterior angles. Elytra narrower than prothorax, truncate-oval (11 × 7.8 mm.); surface rough, a narrow sharply raised con-

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\* Under *Ph. tuberculatus*, Macl., I place *Ph. tepperi*, Blackb.

tinuous costa on each elytron extending backward from each shoulder for two-thirds the length of elytra (this costa parallel to the suture, but bending lightly outwards and joining the middle of the folded humeral border); upper margin of the wide lateral channel costate. Prosternum lightly channelled between coxæ. Length 22.5, breadth 8.3 mm.

*Hab.*—Q.: Townsville (F. P. Dodd; Coll. Sloane).

Its affinity is to *Ph. mastersi*, Macl., from which it differs by its smaller size, lighter form, narrower elytra—with base decidedly narrow, sculpture different (the conspicuous feature is the discoidal costa on each elytron; between these costæ the elytra are rough, the elevations being narrow and irregular with a tendency to be arranged in two irregular rows on each elytron about half-way between the suture and the costæ; there are small tubercles amongst the elevations)—the lateral declivities above the lateral channel have the sculpture more tuberculate, with a row of elongate narrow elevations forming the line of a broken costa rather nearer to the margin than to the discoidal costa. The prosternum has the intercoxal part flat and lightly channelled, not deeply excavate at the base.

#### LACCOSCAPHUS.

*Laccopterum*, Macl., Proc. Linn. Soc. N. S. Wales, 1878, ii. p.214; and *l.c.* 1887, (2) ii. p.122; *Laccoscaphus*, Sl., *op. cit.*, 1904, pp.706, 708.

It appears to me that the name *Laccopterum* cannot stand, being too near *Laccoptera* used by Bohemann in 1855 for a genus of *Cassidideæ*. I have already proposed to replace it by *Laccoscaphus*.

The genus *Laccoscaphus*, as here intended, will at the present time include fourteen species, which are tabulated below, the names of those species which are unknown to me being printed in italics; these have been worked into the table from data suggested by the original descriptions; it is believed they will show all the characters attributed to them in the table.

- A. Elytra with a single row of discoidal foveiform punctures on each.
- B. Elytra 4-punctate, colour cyaneous.....L. (*Scarites*) *cyaneus*, Fabr.
- BB. Elytra with more than two large punctures on each.
- c. Upper surface golden-bronze.....L. (*Carenum*) *deauratus*, Macl.
- cc. Black..... $\left\{ \begin{array}{l} L. (\textit{Carenum}) \textit{multiimpressus}, \textit{Casteln.} \\ L. (\textit{Laccopterum}) \textit{humeralis}, \textit{Sl.}^* \end{array} \right.$
- AA. Elytra with several rows of foveæ on each.
- d. Elytra with a non-foveate space along suture (a row of small ocellate punctures in the lateral channel).
- e. Colour not black.
- f. Upper surface green, with coppery reflections....  
..... $\left. \begin{array}{l} L. (\textit{Carenum}) \textit{gemmatus}, \textit{Westw.} \\ L. (\textit{Carenum}) \textit{foveolatus}, \textit{Macl.} \end{array} \right\}$
- ff. Upper surface dark blue..... $\left. \begin{array}{l} L. (\textit{Carenum}) \textit{foveolatus}, \textit{Macl.} \\ L. (\textit{Carenum}) \textit{foveipennis}, \textit{Macl.} \end{array} \right\}$
- ee. Black.
- g. Elytra with three regular rows of large foveæ, divided by continuous slightly raised interstices...L. (*Carenum*) *spencei*, Westw.
- gg. Elytra with the large foveæ more or less confused.....  
.....L. (*Carenum*) *salebrosus*, Macl.
- dd. Elytra with space near suture (first interstice) foveate.
- H. General colour black, ocellate pores along lateral margin placed in a deep channel and usually in large depressions.
- i. Elytra with the foveæ confused and irregular. (Black).....  
.....L. (*Carenum*) *loculosus*, Newm.
- ii. Elytra with four rows of foveæ on each.
- j. Black.....L. (*Laccopterum*) *macleayi*, Sl.
- jj. Black, with lateral margins of prothorax and elytra bluish...  
.....L. (*Carenum*) *foveigerus*, † Chaud.
- jjj. Black, with lateral margins and bottoms of foveæ of elytra bluish.....L. (*Laccopterum*) *lacunosus*, Macl.
- jjjj. Black, with lateral margins and bottoms of foveæ of elytra greenish.....L. (*Carenum*) *foveipennis*, Macl.
- HH. Upper surface golden-green, a row of closely placed small ocellate pores along lateral margins..L. (*Laccopterum*) *darwiniensis*, Macl.

\* I suspect that *L. humeralis* may be conspecific with *L. multiimpressus*, and that Castelnau's type-specimen was aberrant in the number and position of the elytral foveæ. Mr. French has recently received *L. humeralis* from the Roebuck Bay District.

† It seems possible that with further knowledge *L. foveipennis*, Macl., *L. lacunosus*, Macl., and *L. macleayi*, Sl., may come to be considered only colour-varieties of *L. foveigerus*, Chaud.

## Genus CARENUM.

Bonelli, Mém. Acad. Turin, 1813, p. 479; *Scarites*, Fabricius, Ent. Syst. i. p. 95; *Arnidius* (Leach, MSS.), Boisduval, Voy. Astrolabe, pt. 2, p. 23; *Eutoma* (*nom. præoc.*), Newman, Ent. Mag. v. 1838, p. 170; *Carenoscaphus*, Macleay, Proc. Linn. Soc. N. S. Wales, (2) ii. 1887, p. 23; *Calliscapterus*, Macleay, *ibid.*, p. 121; *Platythorax* (*nom. præoc.*), Macleay, *ibid.*, p. 122; *Chariscapterus*, Sloane, *l.c.* (2) iii. 1888, p. 1111; *Paliscaphus*, Sloane, *ibid.*, p. 1117; Tabulation and List of Species, Sloane, *l.c.* xxv. 1900, pp. 363-368.

*Eutoma* is here again united with *Carenum*. It is a preoccupied name\* for a group of species which I do not regard as entitled to generic rank; therefore I do not attempt to coin a new name for it.

## CARENUM CUPREO-MARGINATUM, Blackburn.

Trans. Roy. Soc. S. Aust. 1887, x. p. 63; *C.* (*Chariscapterus*) *opulens*, Sl., Proc. Linn. Soc. N. S. Wales, (2) iii. 1888, p. 1112.

I now think *Chariscapterus opulens*, Sl., must be placed as a synonym of *Carenum cupreo-marginatum*, Blkb., a species which probably varies considerably in size and colour, and very likely has a wide range east, north and west of Eucla.

## CARENUM CORUSCUM, Macleay.

Trans. Ent. Soc. N. S. Wales, 1864, i. p. 141.

From examination of the type in the Macleay Museum, I record that *C. coruscum* is allied to *C. elegans*, Macl., and would come into section "p" of the table I have given of the *smaragdulum*-group of the genus *Carenum* in these Proceedings, xxv. 1900, p. 371.

## CARENUM CONCINNUM, n.sp.

Elongate-oval, convex; frontal sulci diverging posteriorly; prothorax with posterior angles rounded, base lobate, marginal channel narrow, tripunctate; elytra oval, bipunctate on apical

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\* *Eutomus*, Dej., 1834 (*Curculionidæ.*)

third; anterior tibiæ tridentate. Head and undersurface black; prothorax black, becoming faintly purple towards sides, marginal channel green (except across basal lobe—black); elytra purple, blackish near suture, lateral channel viridescent; inflexed margins with greenish reflections.

Head transversely subquadrate ( $2.5 \times 3.8$  mm.); sides abrupt above eyes; front subdepressed; frontal sulci deep, lightly sinuate, divergent and defining lateral frontal spaces posteriorly; preocular sulcus short, strongly defined; eyes rather protuberant; orbits not prominent behind eyes; two supraorbital punctures on each side. Prothorax transverse ( $3.3 \times 4.5$  mm.), convex, roundly declivous posteriorly to the well-defined basal area; sides subparallel in middle, widely and evenly rounded from intermediate marginal puncture to basal lobe; anterior angles strongly advanced; basal lobe short, rounded, well defined; border narrow, reflexed, thicker and more strongly reflexed on basal lobe; marginal channel narrow, wider across basal lobe; a shallow basal impression on each side near basal sinuosities; median line strongly impressed. Elytra oval ( $8.0 \times 4.7$  mm.), convex; sides evenly rounded; base narrow, obliquely—but strongly—declivous to peduncle, bordered on each side (the border narrow and sharply defined); margin explanate at apex; border narrow, reflexed, prominent at humeral angles, arcuate on each elytron near apex; inflexed margin wide, vertical at apex. Intercoxal part of prosternum hardly longitudinally impressed, bipunctate on each side. Second ventral suture obsolete in middle. Legs light; anterior femora not dilatate in middle; anterior tibiæ slender; posterior tibiæ not thick. Length 15, breadth 4.7 mm.

*Hab.*—W.A.: East Murchison District (Coll. French).

Its affinity is to *C. distinctum*, Macl., these two species being differentiated from their near allies by the following features in combination:—head with two supraorbital punctures on each side; prothorax with three marginal punctures on each side, marginal channel and border narrow; posterior tibiæ slender. *C. concinnum* may be distinguished from *C. distinctum* by its



smaller size; narrower form; elytra more convex, proportionately more elongate, less strongly rounded on sides; margins of prothorax and elytra and inflexed margins of elytra viridescent.

In *C. distinctum* and *C. concinnum* the supraorbital sulcus extends backwards and downwards in a wide shallow course till it meets the suborbital channel, so that the orbits are thus defined from the adjacent parts of the head; this feature is more developed in *C. distinctum*.

#### CARENUM SUBCYANEUM, Macleay.

Trans. Ent. Soc. N. S. Wales, 1869, ii. p.66; (?) *C. rugatum*, Blkb., Trans. Roy. Soc. S. Aust. 1887, x. p.62; (?) *C. sulcaticeps*, Sl., Proc. Linn. Soc. N. S. Wales, 1897, xxii. p.199.

The form which I formerly recorded as "*C. sulcaticeps*, var. C." (these Proceedings, xxii. 1897, p.201), proves, after comparison with the type of *C. subcyaneum*, Macl., to be identical with that species. I now think *C. subcyaneum* will prove to be a variable species ranging over a wide area of Australia to the north, east and west of the Great Australian Bight, and in that belief suggest that *C. rugatum*, Blkb., and *C. sulcaticeps*, Sl., should be placed under *C. subcyaneum*, possibly as varieties.

#### CARENUM CARBONARIUM, Castelnau.

Trans. Roy. Soc. Vict. 1868, viii. p.134; *C. vicinum*, Sl., Proc. Linn. Soc. N. S. Wales (2), iv. 1889, p.1293.

In these Proceedings (xxii., 1897, p.206) I suggested that *C. vicinum*, Sl., might prove to be conspecific with *C. carbonarium*, Casteln. I have now seen a specimen from Esperance, W.A. (sent to me by Rev. Thos. Blackburn) which is identical in colour, &c., with my type of *C. vicinum*. The range of *C. vicinum* being thus extended to Esperance (Castelnau's locality for *C. carbonarium*), I think it must be considered as synonymous with *C. carbonarium*, for the mere fact of a *Carenum* being flushed with purple towards the sides of the prothorax and elytra is quite insufficient to differentiate it from an allied but wholly black

species. *C. anthracinum*, Macl., *C. interruptum*, Macl., and *C. lævigatum*, Macl., are species which vary in colour, some specimens being wholly black, while others have the sides brightly flushed with purple.

CARENUM SUBPORCATULUM, Macleay.

Trans. Ent. Soc. N. S. Wales, 1865, i. p.184; *C. viridimarginatum*, Macl., *l.c.* 1871, ii. p.97; *C. politulum*, Macl., *l.c.* p.98.

I have already published the identity of *C. politulum*, Macl., with *C. subporcatulum*, Macl. (these Proceedings, xxv., 1890, Pt.3, p.379); I have since carefully examined the types of *C. viridimarginatum*, Macl., in the Australian Museum, and have no hesitation in placing that species as a synonym of *C. subporcatulum*.

*Hab.*—S. Q. : Gayndah (Masters), Ipswich (*vide* Macleay), Finche's Creek (40 miles S.W. from Dalby; Sloane).

CARENUM KINGI, Macleay.

Trans. Ent. Soc. N. S. Wales, 1869, ii. p.64; *C. propinquum*, Macl., *l.c.*

Formerly I expressed doubt as to the specific difference of *C. kingi* and *C. propinquum* (these Proceedings, 1897, xxii., p.205). I have since compared the types of these species in the Macleay Museum and could find no reason for keeping them separate.

CARENUM CYANIPENNE, Macleay.

Trans. Ent. Soc. N. S. Wales, 1869, ii. p.62; *C. nitescens*, Macl., *l.c.* p.64.

I have hitherto been unable to indicate the position of *C. nitescens*, Macl., in the genus *Carenum*,\* but having recently carefully examined the type-specimen of *C. nitescens* in comparison with the type of *C. cyanipenne* (both in the Macleay Museum), I am compelled to consider these one species, *C. nitescens* being a specimen in which the two posthumeral discoidal punctures of the elytra are wanting, as sometimes happens in other *Carenums* with 4-punctate elytra.

*C. nitescens* has the facies of *C. cyanipenne*, inflexed margin of elytra similar, prothorax (3·3 × 4·4 mm.) with the lateral setigerous punctures on each side as in *C. anthracinum*, Macl., elytra (6·5 × 4·7 mm.) bipunctate towards apex. Length 14 mm.

*C. cyanipenne* is probably a form of *C. anthracinum*, Macl.† It will be seen from the note given above that, in Macleay's note following his Latin diagnosis of *C. nitescens*, the statement that "The thorax is as long as broad" is not borne out by actual measurement, and that it is evidently by an error that the width is given as "2 lines."

#### CARENUM BONELLII, Westwood.

*C. cyaneum*, Bonelli, Mém. Acad. Turin, 1813, p.479; *C. bonellii*, Westw., Arcan. Ent. 1842, i. p.83; *C. viridipenne*, Westw., Trans. Ent. Soc. 1849, v. p.202; *C. scitulum*, Macl., Trans. Ent. Soc. N. S. Wales, 1863, i. p.144; *C. westwoodi*, Casteln., Trans. Roy. Soc. Vict. 1868, viii. p.136; *C. chaudiroidi*, Macl., Trans. Ent. Soc. N. S. Wales, 1869, ii. p.63.

This is the type-species of *Carenum* on which Bonelli founded the genus; he took it to be *Scarites cyaneus*, Fabr., in which he was wrong, as was shown by Westwood, who named it *C. bonellii*;‡ however, if Bonelli gave a specific as well as a generic diagnosis of his *Carenum cyaneum*, the name should stand, *Scarites cyaneus*, Fabr., being now referred to the genus *Laccoscaphus*. I have not seen Bonelli's paper, so cannot settle this point. All the synonymy given above has been previously recorded except that of *C. chaudiroidi*, the type of which (in the Macleay Museum) I have examined without being able to differentiate it from *C. bonellii*.

\* *Vide* these Proceedings, xxv. 1900, p.368.

† *Vide* Blackburn, Trans. Roy. Soc. S. Aust. x. 1887, p.58; and Sloane, these Proceedings, xxv. 1900, p.379.

‡ Brullé also figured this species and made some notes on it (*vide* White, in Grey's Travels, ii. p.457), and in Masters' Catalogue the reference is "*C. bonellii*, Brullé, Hist. Nat. v. p.63"; this reference is correct, but it is an error to attribute the name *C. bonellii* to Brullé.

## CARENUM BRISBANENSE, Castelnau.

Trans. Roy. Soc. Vict. 1868, viii. p.133; *C. opacum*, Macl.,  
Trans. Ent. Soc. N. S. Wales, 1869, ii. p.63.

I have compared the type-specimen of *C. opacum*, Macl., in the  
Macleay Museum, with a specimen of *C. brisbanense*, Casteln.,  
and consider them the same species.

*Hab.*—Q. : Brisbane (*vide* Castelnau)—N.S.W. : Richmond  
River (Wollongbar; Froggatt), Clarence River (*vide* Macleay).

## CARENUM SIMILE, Macleay.

Trans. Ent. Soc. N. S. Wales, 1865, i. p.182; *C. triste*, Macl.,  
*l.c.* 1869, ii. p.63; *C. ovipenne*, Macl., *l.c.* 1871, ii. p.98.

The type-specimens of *C. triste*, Macl., and *C. ovipenne*, Macl.,  
are in the Australian Museum, where I have seen and compared  
them without finding any specific differences between them, nor  
can I find any grounds for separating them from *C. simile*, Macl.

## CARENUM CORACINUM, Macleay.

Trans. Ent. Soc. N. S. Wales, 1865, i. p.178; *Carenoscaphus*  
*lucidus*, Macl., Proc. Linn. Soc. N. S. Wales, 1887, (2) ii. p.131.

The type of *C. coracinum*, Macl., is in the Australian Museum,  
where I have seen it, and found it conspecific with *Carenoscaphus*  
*lucidus*, Macl., the type of which is in the Macleay Museum. A  
specimen from the Dawson River, Q., in my possession was com-  
pared with both types and found the same.

*Hab.*—Q. : Dawson River (Barnard), Ipswich (*vide* Macleay)  
—N.S.W. : Nyngan (Brown).

*Note.*—Two specimens which seem conspecific with *C. coraci-*  
*num*, Macl., have been given to me by Mr. H. W. Brown, who  
took them near Nyngan, N.S.W. These specimens are in a  
damaged condition; one has the elytra 4-punctate as in *C. coraci-*  
*num*, and is wholly black; the other is black, with the prothorax  
narrowly edged with purple; the elytra are purple with the disc  
near the suture purple-black, quadripunctate (the posterior punc-  
tures being, however, double), and, in addition, each elytron has

a row of widely placed punctures (of same size as the usual discoidal punctures) extending from the anterior to the apical discoidal punctures, but placed on a line about one millimètre nearer the suture than the anterior discoidal puncture. There are five punctures in the row on the left elytron, and three on the right; their presence is probably abnormal.

CARENUM TINCTILATUM, Newman.

*Eutoma* (nom. præoc.) *tinctilatum*, Newm., Ent. Mag. v. p.171; *Carenum bipunctatum*, Macl., Trans. Ent. Soc. N. S. Wales, i. 1863, p.60; *C. substriatulum*, Macl., l.c. 1865, p.179; *C. glaberrimum*, Macl., l.c. p.180; *C. subrugosulum*, Macl., l.c. p.180; *C. undulatum*, Macl., l.c. p.180; *Eutoma newmani*, Casteln., Trans. Roy. Soc. Vict. viii. 1868, p.140; *E. leve*, Casteln., l.c. p.141; *E. loddonense*, Casteln., l.c. p.142; *E. punctulatum*, Macl., Proc. Linn. Soc. N. S. Wales (2), ii. 1887, p.130.

I have already suggested the likelihood of all the above synonymy, and a recent examination of the types in the Macleay Collection of *C. subrugosulum*, *C. substriatulum*, *C. glaberrimum*, and *C. undulatum* has convinced me of their identity with *Eutoma tinctilatum*, Newm. The type of *Eutoma mastersi*, Macl., is not in the Macleay Collection, but I think it unlikely that it will prove different from *C. tinctillatum*.

TRICHOCARENUM CASTELNAUI, n.sp.

♂. Elongate, cylindrical, lævigata. Head large; three supra-orbital punctures on each side; suborbital channel short, wide, not longitudinally divided by a median ridge: prothorax longer than broad, each lateral channel with six setigerous punctures: elytra oval; inflexed lateral margin narrow behind first ventral segment; a longitudinal row of six or seven widely placed punctures on each elytron at about the external third of its width: anterior tibiæ bidentate. Black, shining.

Head large, convex (3.8 mm. across eyes); frontal sulci long, deep, diverging lightly backwards and reaching to opposite base of orbits; intermediate angles of clypeus short, dentiform; eyes deeply set in orbits, depressed; orbits prominent, postocular

part projecting strongly from head and reaching slightly beyond eyes; paragenæ longitudinally striolate and with two or three setigerous punctures just below insertion of antennæ. Palpi with apical joint securiform, of maxillary moderately so, of labial enormously so; penultimate joint of labial short, plurisetose. Prothorax very little broader than head ( $4.4 \times 4$  mm.), strongly convex, strongly and roundly declivous to base; sides parallel, roundly narrowed to base; anterior angles lightly advanced; border narrow, subsinuate on each side of base; marginal channel narrow. Elytra a little wider than prothorax ( $9.5 \times 4.2$  mm.); suture depressed (so that each elytron is separately convex); base very roundly and deeply declivous to peduncle, shoulders rounded; lateral border narrow, lightly upturned and closing lateral channel at humeral angles; point of junction of lateral border with the border of the sides of the base forming merely a lightly marked angle, not folded back or the least upturned; a row of closely placed ocellate punctures in lateral channel very near border; five punctures on each side of basal declivity. Prosternum with a few scattered setigerous punctures before coxæ. Abdomen with second segment setigerous on each side under the trochanters; ambulatorial setæ present. Legs long, light; anterior femora dilatate, with four or five punctures along posterior edge of lower side; posterior coxæ with two setigerous punctures.\* Length 17.5, breadth 4.2 mm.

*Hab.*—W.A.: Roebuck Bay District (Coll. French).

Differs evidently from *T. elderi*, Blackburn. (from description) by smaller size, three (not four) setigerous punctures above each eye, prothorax with six setigerous punctures (not "a close-set row") in each lateral channel, elytra with one row (not two) of widely placed punctures on each elytron; from the description of *T. cylindricum*, Sl., it differs by smaller size, head with three supraorbital punctures on each side, prothorax longer than broad, and with more than three marginal setigerous punctures on each side.

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\* The "anterior" and the "inner marginal" punctures are present; the position of the "apical" puncture is indicated, but does not bear a seta.

Genus *CARENIDIUM*.

Chaudoir, Ann. Soc. Ent. Belg. 1869, p.149; *Conopterum* (*gen. ined.*), Chaudoir, *l.c.* p.148.

The genus *Carenidium* may be differentiated from the other *Carenid* genera by the following features in combination :—

Palpi with apical joint very widely securiform; labial with penultimate joint short, plurisetose in front; the suborbital antennal scrobes deep, narrow, bordering and following the contour of the paragenæ, their upper margin forming a more or less distinct ridge; antennæ setaceous; elytra with lateral border narrow and neither thickened nor upturned in a projection at the humeral angles; apical ventral segment with upturned edge foveate on each side of apex.

I do not think *Conopterum*, which has the labrum and clypeus truncate, can be separated as a genus distinct from *Carenidium*. *C. septentrionale*, Macl., with the clypeus as in *C. riverinæ*, Macl., but the wide labrum lightly emarginate (also mandibles in ♀ intermediate in form between those of *C. gatinum*, Macl., and *C. riverinæ*, Macl.); and *C. sapphirinum*, Bates, with both clypeus and labrum only lightly emarginate, are species which seem to compel the union of *Conopterum* with *Carenidium*.

*Table of Species.*

- I. Labrum and median part of clypeus emarginate; mandibles when closed not forming a raised ridge before labrum (*CARENIDIUM*, typical form).
  - A. Elytra not mucronate at apex.
    - B. Head strongly narrowed on each side behind eyes; inflexed margins of elytra wide, strongly and continuously narrowed to apex.
      - c. Elytra impunctate.
        - d. Punctures on base of elytra not placed in a depression.
          - e. Prothorax subparallel on sides between marginal punctures; colour black..... *C. gatinum*, Macl.
          - ee. Prothorax cordate, sides rounded; upper surface with metallic tints (violaceous) at least near margins..... } *C. superbum*, Cast.  
*C. pyripenne*, Sl.
        - dd. Punctures on base of elytra placed obliquely in a depression. (Upper surface green, at least near sides).. } *C. sapphirinum*, Bates.  
*C. spaldingi*, Macl.

- cc. Elytra with four discoidal punctures. . . . . *C. dameli*, Macl.  
 BB. Head lightly narrowed behind eyes; inflexed margins of elytra rather narrow and but little reduced in width opposite third and fourth ventral segments. . . . . *C. septentrionale*, Macl.  
 AA. Elytra bimucronate at apex.  
 f. Apical declivity of elytra without ante-apical tubercles. . . . . *C. mucronatum*, Macl.  
 ff. Apical declivity of each elytron with an ante-apical tubercle a little before the apical mucro. . . . . *C. leai*, Sl.  
 II. Labrum and median part of clypeus truncate; mandibles in ♀ when closed forming a transverse ridge in front of labrum, in ♂ the left mandible bearing an erect horn (CONOPTERUM, Chaudoir).  
 G. Prothorax broader than long.  
 H. Elytra with inflexed margins wide, strongly and continuously narrowed to apex.  
 i. Prothorax roundly ampliate on sides, elytra impunctate. . . . . *C. tropicale*, Macl.  
 ii. Prothorax narrower, sides very lightly rounded between marginal punctures; elytra 4-punctate on disc. . . . . *C. riverinae*, Macl.  
 HH. Elytra with inflexed margins rather narrow and but little reduced in width opposite third and fourth ventral segments.  
 j. Clypeus with intermediate angles normal; } *C. modestum*, Sl.  
 elytra 4-punctate. . . . . } *C. purpuratum*, Sl.  
 jj. Clypeus with right intermediate angle of clypeus (in ♂) developed into a strong erect horn; elytra impunctate. . . . . *C. bicornutum*, Macl.  
 GG. Prothorax longer than broad. . . . . *C. aberrans*, Sl.

## NOTES.

*Carenidium sapphirinum*, Bates.—My former note on this species\* was founded on the male; Mr. French has since sent me the female, which agrees better with the original description, having the elytra convex. Length 29-32, breadth 9.5-11 mm. Bates gave the size of his specimen as 12 lines, but I think Mr. French's specimens must be referred to *C. sapphirinum*, for mere size is too unimportant to rely on as a specific character in *Carenidium*; specimens of *C. superbum*, Casteln., in my possession, taken at Mulwala, N.S.W., vary in length from 26 to 32 mm., and I have a specimen of the same species from near Grenfell only 24 mm. in length.

*Hab.*—N.W.A.: Shark's Bay (Canarvon; *vide* French).

\* These Proceedings, xxv. 1900, p. 386.



*Carenidium spaldingi*, Macl.—Allied to *C. sapphirinum*, Bates, but differently coloured, the elytra having the sutural part of the disc blue-black; this sutural area is sharply defined by the golden green colour of the lateral, apical and basal declivities. I regard it as specifically distinct from *C. sapphirinum*.

*Carenidium chaudiiri*, Macl., is very like *C. tropicale*, Macl., but has the labrum semicircular, and the mandibles without a raised ridge in front of the labrum. The following note was made with the types of both species (uniques in Macleay Museum) before me. *C. tropicale* has head and labrum of a *Conopterum*; it is of same form and convexity as *C. chaudiiri*, but differs by labrum truncate, clypeus truncate, mandibles with raised ridge before labrum; prothorax with anterior angles widely rounded (very widely obtuse and not advanced), anterior marginal puncture nearer anterior angle.

*Carenidium darlingense*, Macl.—I have examined the type-specimen of this species in the Macleay Museum. It has the labrum and clypeus truncate, and the facies of *C. riverinae*, Macl., to which it is closely allied. The original description is wrong as to the shape of the elytra, which have not “the length three times the width.”

*Conopterum incornutum*, Macl.—After examining the type-specimen in the Macleay Museum, I hesitate to consider this species as different from *C. riverinae*, Macl.; it is, however, of slightly wider form. Mr. Froggatt has given me two specimens from Gin Gin in the Wide Bay District of Queensland; one of these has a strong erect horn on the left mandible, as in *C. riverinae* ♂, but a little shorter.

*Conopterum litorale*, Macl.—I have seen the type-specimen in the possession of Mr. Masters (now in the Macleay Museum). It is identical in facies with *C. incornutum*, Macl., but with impunctate elytra; I should expect the type to be abnormal in this respect and to be conspecific with *C. incornutum*; the examination of more specimens of both forms will be necessary to determine this.

## CARENIDIUM PURPURATUM, n.sp.

♂. Elongate; head large, wide across eyes (5.3 mm.); labrum short, truncate; prothorax subcordate, lobed at base, bipunctate in lateral channel; elytra flat on disc, strongly declivous to sides and apex, 4-punctate; anterior tibiæ 2-dentate. Violaceous; head black, with a purple flush on sides of vertex, on lateral frontal spaces, and on gulæ; prothorax black in middle of disc, widely violaceous towards sides and base with cyaneous tints near posterior angles; elytra of a uniform bright violet; under surface and legs black, a slight violaceous flush on episterna of prosternum and on inflexed sides of elytra.

Head convex, declivous to anterior margin; front with median space strongly convex, lateral spaces convex, wide, strongly roundly declivous before eyes; frontal sulci long, deep, diverging posteriorly; supraocular sulcus extending decidedly forward on to lateral frontal spaces, but not attaining anterior margin; clypeus with median part declivous, truncate and with three impressions (a longitudinal sulciform impression at each side, at base of intermediate tooth, and a lighter wider one in middle), intermediate teeth short, obtuse, prominent; eyes prominent, strongly inclosed at base; orbits concave below eyes, their post-ocular parts rising from head in a sharp oblique slope; two supra-orbital punctures on each side. Mandibles thick, outer side abrupt towards base; right with a very large prominent irregular tooth in the middle, left with a wide tooth in middle (this tooth not greatly upturned, but very wide and with an obtuse prominence at each side of apex). Prothorax broader than long (4.5 × 5.9 mm.), not much wider than head with eyes, widest near posterior marginal puncture, depressed along median line; sides subparallel (narrowing a little forward in a very gentle oblique curve); basal curve strongly sinuate on each side of basal lobe; anterior margin widely emarginate; anterior angles prominent, obtuse, roundly subtruncate; basal lobe roundly truncate; basal area defined by a strong transverse line and very little depressed below plane of disc; border narrow on sides, widely reflexed on each

side of basal curve, thicker and less reflexed on basal lobe; median line strongly impressed; a wide shallow impression near each basal sinuosity. Elytra of same width as prothorax ( $11 \times 5.9$  mm.), subparallel, very gently and roundly narrowed to base, flattened on disc near suture, strongly declivous to peduncle and to border at humeral angles; border narrow; four or five punctures on base of each elytron not placed in a depression; submarginal row of punctures close together at humeral angles, more distant (but not widely placed) on sides. Length 20, breadth 5.9 mm.

*Hab.*—Q. : Winton District (Colls. French and Sloane; sent to me by Mr. C. French)

If the subgenus *Conopterum* be recognised, *C. purpuratum* would come into it; in facies it resembles *C. bicornutum*, Macl., with the type of which I have compared it, and from which it differs conspicuously by the quadripunctate elytra, and by the form of the clypeus—in *C. bicornutum* the right intermediate angle of the clypeus is developed into a strong erect horn. *C. purpuratum* is allied to *C. modestum*, Sl., but differs by its violaceous colour; narrower form; head more convex, postocular part of orbits rising sharply and obliquely from head; prothorax more flattened on disc, less rounded on sides, with sinuosities of basal curve stronger; elytra flatter on disc and narrower, humeral curve less strongly rounded, apical declivity more abrupt and without a deep longitudinal channel along suture, lateral punctures more closely placed at humeral angles, &c. In *C. purpuratum* and *C. modestum* the antennal scrobes are deep and narrow, with a strongly developed ridge on upper side; the space between this ridge and the eye is strongly concave.

#### CARENARCHUS.

*Eurygnathus*, Blackburn, Trans. Roy. Soc. S. Aust. 1887, x. p.13; *Epilectus*, Blackburn, *l.c.* p.177; *Carenarchus*, Sl., Proc. Linn. Soc. N.S.W. 1904, pp.706, 709.

In 1887 Mr. Blackburn described a large Carenid as *Eurygnathus fortis*; subsequently finding *Eurygnathus* already in use, he altered it to *Epilectus*, but this name is too near *Epilecta* used

by Hübner previously for a genus of Lepidoptera. It therefore becomes necessary to form a new generic name to replace *Epilectus*. I have already suggested *Carenarchus*.

CARENARCHUS MASTERSI, Macleay.

*Neocarenum mastersi*, Macl., Trans. Ent. Soc. N. S. Wales, 1869, ii. p.68.

I have examined the type-specimen of *Neocarenum mastersi*, Macl., in the Australian Museum, and have no hesitation in referring it to *Carenarchus*. I have not seen the type-specimen of *Eurygnathus fortis*, Blkb., but there is a specimen in Mr. French's Collection which I have identified as Mr. Blackburn's species from the description. Mr. French's specimen is from Victoria, and he has given me a mutilated specimen (only the elytra and body without legs remain), taken by Mr. C. French, Junr., in the Mallee District of Victoria. I have compared these elytra with the type of *C. mastersi* without finding any differences. Sir William Macleay's description is so poor that it is practically useless, but, as far as it goes, it agrees with Mr. Blackburn's description of *C. fortis*, so that I suspect identity between these species, and feel some doubt as to whether the type-specimen of *Neocarenum mastersi* was found in Western Australia.

Genus TERATIDIUM.

Bates, Ent. Mo. Mag. 1874, xi. p.100; *Monocentrum*, Chaudoir, Ann. Soc. Ent. Belg. 1869, p.146.

The genus *Monocentrum*, Chaudoir, was anticipated by *Monocentrus*, Cuvier (Class Pisces), but I do not propose to replace it by a new name, being of opinion that the limits of the genus *Teratidium* should be extended to take in the species hitherto attributed to *Monocentrum*, which will then become a synonym.

Table of Species.

- A. Head with frontal impressions only present at sides of clypeus, obsolete between eyes. Elytra with a deeply marked oblique punctate depression behind a transverse basal prominence near each humeral angle.
- b. Eyes convex..... *T. macros*, Bates.

- bb. Eyes depressed (not more prominent than posterior part of orbits).
- c. Eyes, including orbits, standing decidedly out beyond preocular part of head, and strongly rounded on outer side.
- d. Form stout; elytra not exceeding half the length of insect (12.5 × 6.1 mm.) ..... *T. frenchi*, Sl.
- dd. Form narrow; elytra more than half the length of insect (13.6 × 5.5 mm.)... ..... *T. perlongum*, Sl.
- cc. Eyes, including orbits, hardly more prominent than preocular part of head, and lightly or hardly rounded on outer side.
- e. Colour obscure (black, with some faint purple reflections on sides); elytra convex..... *T. convexum*, Sl.
- ee. Colour metallic green or purple, disc of elytra depressed.....  
..... *T. laticeps*, Sl.
- AA. Head with frontal impressions well marked between eyes. Elytra with a slightly marked oblique punctate depression near each humeral angle, base of elytra not raised into a ridge before these depressions.
- f. Black; stout; eyes prominent..... † *T. grandiceps*, Chaud.
- ff. Violaceous; very elongate; eyes depressed. . . . . ‡ *T. longiceps*, Chaud.
- fff. Prothorax bright green; elytra splendid coppery-green (*vide* Westwood)..... *T. megalcephalum*, Westw.

TERATIDIUM MACROS, Bates.

Ent. Mo. Mag. 1874, xi. p.100.

Narrow, elongate. Black. Head large (6.3 mm. across eyes), convex, strongly narrowed behind eyes; anterior margin truncate behind mandibles; preocular processes large, protuberant, rounded externally; front with a light linear oblique impression on each side rising from a puncture at inner extremity and defining sides of clypeus; a puncture on each side of clypeus; median part of clypeus lightly trisinate, the teeth on each side triangular, small but prominent; eyes large, convex, more prominent than pre-

\* Note.—I have said in the description of *T. laticeps*, “Elytra hardly as wide as prothorax (10 × 4.5 mm.),” the size of the prothorax being given as 4.75 × 4.25 mm; it should have read—Elytra hardly as wide as head (4.5 mm.); the measurements are correct.

† Head 5 mm. across eyes; proth. 5 × 5; el. 11 × 5.3; length 21 mm. *Hab.*—Cairns, Queensland (Dodd).

‡ Head 4.25 mm. across eyes; proth. 5.2 × 4.2; el. 10.8 × 4.2; length 21 mm. *Hab.*—Duaringa, Queensland (the late G. Barnard).

ocular processes; postocular part of orbits rising decidedly but roundly from head, not forming anteriorly a thick border to external part of eyes; one supraorbital puncture on each side.\* Prothorax convex, a little longer than broad ( $7 \times 6.5$  mm.); lightly rounded on sides, sinuate-angustate to base; anterior margin truncate; border not the least advanced at anterior angles; lateral margins bipunctate, posterior puncture a little before posterior sinuosity, anterior (double on both sides in specimen before me) near apex—about 1.6 mm. behind anterior angle. Elytra long ( $14.5 \times 6.7$  mm.), lævigata, depressed along suture; base of each elytron with a wide strongly raised oblique ridge rounded on summit, these ridges rather widely separated from one another by the sutural depression; a row of ocellate punctures along posterior side of each ridge in a slight depression; elytra united at apex to form a rather prominent triangular projection; lateral borders becoming wide and thick posteriorly, divided from one another at apex by the apical prominence; a dentiform prominence behind each humeral angle. Prosternum with intercoxal part impunctate and gently declivous to base. Ventral segment and posterior coxæ impunctate. Length 28, breadth 6.7 mm.

*Hab.*—W.A.: Roebuck Bay (Coll. French; unique).

The larger size and black colour at once distinguish it from other described allied species. There is a faint suspicion of a bluish tinge on the sides of the elytra, so that I should expect this species to be somewhat variable in colour, perhaps in some localities showing a tendency to become violaceous.

I consider the species before me to be *T. macros*, Bates, but would call attention to the following characters in the original description as presenting differences:—

“Head broader than the thorax”—I believe Bates to have made this statement from the appearance of these parts; to the

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\* There is a single puncture on the right side, and two closely placed on the left—evidently a case of the duplication of single setigerous punctures so frequently met with throughout the *Carenides*.

eye the head does appear wider than the thorax, though by measurement it is not actually so. "Four teeth of the clypeus of equal size"—in the specimen before me this is not the case; the outer pair of teeth are prominent and triangular, the inner pair merely obtuse prominences. "Prothorax much longer than broad"—it appears so to the eye, but is only slightly longer by measurement.

TERATIDIUM FRENCHI, n.sp.

Elongate, lævigata. Head large, constricted posteriorly; prothorax hardly longer than broad, strongly angustate to base, marginal channel unipunctate about half-way between anterior and posterior angle; elytra long, impunctate, lateral border thick—particularly posteriorly; anterior tibiæ unidentate. Head black with green tinge on neck (above and below) and beneath eyes; prothorax green, brighter towards sides, under surface green, brighter on episterna; elytra green; body and legs black with greenish reflections on sides of mesosternum and of ventral segments.

Head lævigata, convex; anterior part widely subquadrate, defined posteriorly by a transverse impression; front with a light oblique linear impression on each side defining sides of clypeus, a punctiform impression at internal extremity of each of these sulci; clypeus impunctate, convex, strongly declivous to anterior margin, median part lightly produced in middle—this median prominence wide and very lightly emarginate—intermediate angles rather prominent, obtuse, wide at base; supra-antennal plates large, convex, rounded externally; eyes deeply set in orbits, rather prominent; orbits large, enclosing posterior two-thirds of eyes, obliquely and roundly narrowed to neck; one supraorbital puncture on each side. Prothorax of same width as head, hardly longer than broad ( $5.6 \times 5.5$  mm.), convex, declivous posteriorly to the wide basal area between juxtabasal sinuosities of border; sides subparallel in middle, lightly narrowed to anterior angles; posterior angles not marked; apex truncate, anterior angles feebly advanced; base widely and evenly rounded between juxtabasal sinuosities; border narrow, even, a little wider at

apex to form the slightly prominent anterior angles, lightly sinuate on each side just before the base, thicker but hardly raised on base; a light elongate lateral basal impression extending forward from each juxtabasal sinuosity; median line linear but strongly impressed. Elytra wider than prothorax, elongate-oval ( $12.5 \times 6.1$  mm.), widest (including border) behind middle, narrowed to base, convex, lightly depressed on each side of suture, strongly declivous to apex; base lightly emarginate behind peduncle, strongly and abruptly declivous, the declivity impunctate; apical curve wide, apex produced shortly and obtusely beyond lateral border; a strongly raised roundly convex oblique ridge on each elytron above basal declivity, a punctate depression behind this ridge; border narrow near shoulders, becoming very wide and thick posteriorly, reaching peduncle, strongly upturned and rounded at humeral angles; a row of umbilicate punctures along margin, these becoming more widely placed near apex. Ventral segments impunctate. Legs long, light; anterior tibiæ with apex strongly produced, a minute denticulation on external side level with base of tarsus; intermediate tibiæ not dentate externally at apex. Length 23.5, breadth 6.1 mm.

*Hab.*—W.A.: Roebuck Bay (Colls. French and Sloane).

#### TERATIDIUM CONVEXUM, n.sp.

Elongate, cylindrical, lævigata; head convex, subquadrate, constricted posteriorly, posterior part of frontal impressions very feebly indicated, not sulciform; elytra elliptical, convex, impunctate. Nitid, black with a very obscure purple tinge on sides of elytra and prothorax.

Head large ( $4 \times 4$  mm.); anterior part widely subquadrate, convex; front with a well marked but shallow oblique sulcus on each side defining the sides of the clypeus; clypeus with median part strongly and abruptly declivous, emarginate-truncate; two supra-orbital punctures on each side; eyes deeply set in orbits, depressed; orbits large, equally prominent with and enclosing posterior two-thirds of eyes, projecting abruptly behind from sides of head. Antennæ moniliform; joints 4-11 compressed, bisulcate and



sparsely setose on edges. Prothorax convex, as wide as head, longer than broad ( $4.6 \times 4$  mm.), lightly angustate to base; sides parallel, lightly sinuate just before base; anterior margin truncate, with angles feebly advanced; base rounded; basal angles obtuse; border narrow, thicker and more raised on base; marginal channel narrow, 3-punctate (one puncture at posterior angle, and two close together about anterior fourth), median line fine. Elytra a shade wider than prothorax ( $9 \times 4.15$  mm.), convex, lightly rounded on sides, a little narrowed to base, widest just behind middle; base subemarginate, strongly and abruptly declivous; lateral border thick and convex posteriorly, narrow, upturned and rounded at humeral angles; lateral row of umbilicate punctures closely set on basal third, wider apart posteriorly; a wide oblique punctate impression on each side near base. Ventral segments 3-6 with two setigerous punctures on each side. Legs light; anterior tibiæ with apex strongly produced; intermediate tibiæ with a short external spur-like projection at apex; posterior coxæ and trochanters without setigerous punctures. Length 18, breadth 4.15 mm.

*Hab.*—Q.: Cooktown (Coll. French; unique, ♂).

It belongs to the section of the genus in which the front is without strong sulci between the eyes (*Teratidium*, *sensu* Bates). Its general resemblance is to *T. perlongum*, Sl., from which it differs by smaller size; eyes less prominent, postocular protuberances larger and rising more sharply from head; elytra narrowed to base, the ridge dividing the basal depressions from the base narrower and less elevated.